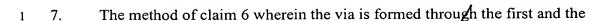




What is claimed is:

SUB 7

- 1. A method of forming a semiconductor device comprising:
- 2 forming a first patterned conductive layer on a dielectric material on a substrate;
- forming a first barrier layer on the surface of the first patterned conductive
- 4 layer;
- forming a second barrier layer on the surface of the first barrier layer; and
- forming a dielectric layer on the surface of the second barrier layer.
- 1 2. The method of claim 1 further comprising forming any one of a via, and a
- 2 trench through a first portion of the disfectric layer.
- 1 3. The method of claim 2 further comprising forming a trench through a second
- 2 portion of the dielectric layer if the via is formed through the first portion of the
- 3 dielectric layer.
- 1 4. The method of claim 3, wherein the via is filled with a sacrificial light
- absorbing material comprising at least one of a dyed spin-on polymer and a dyed spin-
- on glass with dry etch properties similar to the dielectric layer.
- 1 5. The method of claim 2 further comprising forming a via through a second
- 2 portion of the dielectric layer if the trench is formed through the first portion of the
- 3 dielectric layer.
- 1 6. The method of claim 3 further comprising forming the via through the second
- barrier layer followed by forming the via through the first barrier layer.



- 2 second barrier layer with a single etch pass.
- 1 8. The method of claim 1 wherein the first barrier layer comprises less than 20
- 2 nanometers of silicon nitride.
- 1 9. The method of claim 8 wherein the first/barrier layer comprises between 1
- 2 nanometer and 7 nanometer of silicon nitride
- 1 10. The method of claim 1 wherein the second barrier layer comprises less than 200
- 2 nanometers of silicon carbide.
- 1 11. The method of claim 8 wherein the silicon nitride is deposited using any one of
- a plasma enhanced chemical vapor deposition process, a chemical vapor deposition
- 3 process and an atomic layer/deposition process.
- 1 12. The method of glaim 10 wherein the silicon carbide is deposited using any one
- of a plasma enhanced/chemical vapor deposition process, a chemical vapor deposition
- 3 process and an atomic layer deposition process.
 - 13. A method of forming a semiconductor device comprising:
- forming a first patterned conductive layer on a dielectric material on a substrate;
- forming a first barrier layer comprising silicon nitride on the surface of the first
- 4 conductive layer;



forming a second barrier layer comprising silicon carbide on the surface of the

- 6 first barrier layer; and
- 7 forming a dielectric layer on the surface of the second barrier layer.
- 1 14. The method of claim 13 further comprising forming any one of a via, and a
- 2 trench through a first portion of the dielectric layer.
- 1 15. The method of claim 14 further comprising forming a trench through a second
- 2 portion of the dielectric layer if the via is formed through the first portion of the
- 3 dielectric layer.
- 1 16. The method of claim 15, wherein the viz is filled with a sacrificial light
- 2 absorbing material comprising at least one of a dyed spin-on polymer and a dyed spin-
- on glass with dry etch properties similar to the dielectric layer.
- 1 17. The method of claim 15 further comprising forming a via through a second
- 2 portion of the dielectric layer if the french is formed through the first portion of the
- 3 dielectric layer.
- 1 18. The method of claim 1/4 wherein the via is formed through the first and the
- 2 second barrier layer with a single etch pass.
- 1 19. The method of flaim 13 wherein the first barrier layer comprising silicon nitride
- 2 comprises between 1/nanometer and 7 nanometer of silicon nitride.







1 20. The method of claim 13 wherein the second parrier layer comprising silicon

- carbide comprises less than 200 nanometers of silicon carbide.
- 1 21. The method of claim 13 wherein the silicon nitride and the silicon carbide is
- deposited using any one of a plasma enhanced chemical vapor deposition process, a
- 3 chemical vapor deposition process and an atomic layer deposition process.

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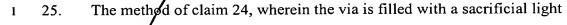
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22. A method of forming a semiconductor device comprising:

2 forming a first patterned conductive layer on a dielectric material on a substrate;

forming a first barrier layer comprising silicon nitride on the surface of the first

- 4 patterned conductive layer;
- forming a second barrier layer on the surface of the first barrier layer; and
- forming a dielectric layer on the surface of the second barrier layer.
- 1 23. The method of claim 22 further comprising forming any one of a via, and a
- trench through a first portion of the dielectric layer.
- 1 24. The method of claim 23 further comprising forming a trench through a second
- 2 portion of the dielectric layer if the via is formed through the first portion of the
- 3 dielectric layer.



- 2 absorbing material comprising at least one of a dyed spin-on polymer and a dyed spin-
- on glass with dry etch properties similar to the dielectric layer.







- 1 26. The method of claim 24 further comprising forming a via through a second
- 2 portion of the dielectric layer if the trench is formed through the first portion of the
- 3 dielectric layer.
- 1 27. The method of claim 24 further comprising forming the via through the second
- 2 barrier layer followed by forming the via through the first barrier layer.
- 1 28. The method of claim 27 wherein the via is formed through the first and the
- 2 second barrier layer with a single etch pass.
- 1 29. The method of claim/22 wherein the first barrier layer comprises between 1
- 2 nanometer and 7 nanometer of silicon nitride.
- 1 30. The method of claim 22 wherein the second barrier layer comprises less than
- 2 200 nanometers of silicon carbide.

